

GYPTIS CRYPTA, A NEW HESIONID SPECIES FROM
THE U.S.A. EAST COAST, WITH A REDESCRIPTION OF
G. VITTATA WEBSTER & BENEDICT, 1887
(ANNELIDA: POLYCHAETA)

Fredrik Pleijel

Abstract.—*Gyptis crypta*, new species, is described from North Carolina, Florida, and off Mississippi, and several previous records of *G. vittata* Webster & Benedict, 1887 are referred to this species. The new species is unique within the genus in having only ten terminal papillae on the proboscis, and in having segment 5 equipped with both noto- and neurosetae, rather than neurosetae only. The European species *G. rosea* (Malm, 1874) and *G. mediterranea* Pleijel, 1993 are considered the most closely related. *Gyptis vittata* is redescribed from type material.

Subsequent to the original account, *Gyptis vittata* Webster & Benedict, 1887 has been reported on several occasions from the U.S.A. east coast (e.g., Pettibone 1963, Day 1974, Gardiner 1975, Uebelacker 1984). Reexamination of the currently available specimens on which these records were based shows them to represent, in part (Pettibone 1963), a species of *Podarkeopsis*, possibly *P. levifuscina* Perkins, 1984, and, in part (Gardiner 1975, Uebelacker 1984), an undescribed species of *Gyptis*, herein described as *G. crypta*. Day's specimens were not available for examination, and are considered of uncertain status. Except for the original description from Maine, no valid literature records of *G. vittata* appear to exist. To avoid further confusion, *G. vittata* is redescribed from the syntypes.

A provisional diagnosis and a brief discussion of the genus *Gyptis* Marion & Bobretzky, 1875 is provided in Pleijel (1993).

All drawings were made with a camera lucida. Width measurements are from median segments and include parapodia but exclude cirri and setae. Apart from material of congeneric species used for comparison (detailed in Pleijel 1993), the study is based on specimens from the National Museum

of Natural History, Smithsonian Institution, Washington, D.C. (USNM).

Gyptis vittata Webster & Benedict, 1887
Fig. 1

Gyptis vittata Webster & Benedict, 1887: 715–716, pl. 1, figs. 21–22, pl. 2, fig. 23. [Not descriptions and figures of *Gyptis vittata* sensu Pettibone, 1963:106–107, fig. 28c–d.—Gardiner, 1975:119, fig. 81–p.—Uebelacker, 1984:28–29 to 28–31, fig. 28–28a–g]

Material examined.—Maine: 3 syntypes (USNM 452, including slides 503–506), Eastport, low water, rocks; 25–30 fm, shells. (Specimens apparently from two different but fused samples.)

Description.—Prostomium rounded, about as wide as long, posteriorly with rounded lobes separated by posterior incision (Fig. 1A). Palpophores cylindrical; palpostyles widest medially, anteriorly rounded (Fig. 1B), longer than palpophores. Paired antennae thinner and possibly longer (see Remarks) than palps, cylindrical with pointed tips. Median antenna short, club-shaped, widest subdistally (but see Remarks); inserted half-way between anterior

pair eyes and anterior margin of prostomium. Anterior pair eyes rounded to reniform, twice as large as posterior pair and situated further apart; posterior pair rounded; both pairs with lenses. Nuchal organs not discernible.

Large, distinct lip glands present laterally on the ventral lips (Fig. 1B). Proboscis probably divided in proximal and distal parts (visible on a mounted specimen only where it is partly everted and difficult to observe). Number of terminal proboscideal papillae difficult to discern, possibly 15–20. Papillae in single ring, conical to cylindrical.

Proximal parts of tentacular cirri indistinctly annulated, medial and distal parts distinctly annulated; rings about as long as wide; tips not observed (no complete tentacular cirri present). At least one acicula present in all cirrophores of dorsal tentacular cirri, not discernible in ventral ones. Anterior dorsal segmental delineations not distinct; segment 1 probably reduced and following segments fused.

Notopodia of segment 5 (setiger 1) without setigerous lobes or setae. Dorsal cirri incomplete, slightly stouter than those of following segments. Neuropodia similar to following ones. Ventral cirri similar to following ones but slightly smaller. Segment 6 similar to median ones.

Notopodia of median segments situated on cirrophores, with distinctly annulated dorsal cirri, longer than notosetae. Rings ca. 1.5 times as long as wide. Possible alternation of length and orientation of dorsal cirri not discernible. Notopodial lobes conical, with one or two internal aciculae. All notosetae simple; setal details not discernible.

Neuropodia of median segments conical, with two internal aciculae, one larger and one smaller. All neurosetae compound; distal part of shafts internally reticulated. Ventral cirri apparently smooth, shorter than neuropodial lobe, on small cirrophores situated far back on the neuropodium (Fig. 1C).

Pygidium not observed.

Color: Eyes brown. No other pigmentation retained.

Habitat.—Currently known only from rocks, intertidal, and shells, 25–30 fm.

Distribution.—Known only from the type locality.

Remarks.—Webster & Benedict's material consists of three syntypes: one in alcohol, two mounted on slides (one dorsally and one ventrally), and two additional slides with mounted parapodia. All three specimens lack posterior ends. The unmounted specimen consists of an anterior end plus a median part, both in very poor condition. The mounted syntypes are both females with eggs, one approaching maturity with eggs about 120–140 μm in diameter. A median antenna is present only on one of the mounted specimens, and, being of unusual shape for the group, it cannot be excluded that it is distorted (e.g., flattened by preparation).

As seen from the descriptions as well as specimens deposited at USNM, Gardiner's (1975) and Uebelacker's (1984) descriptions of *G. vittata* both refer to *G. crypta*, new species, whereas Pettibone's (1963) description refers to a species of *Podarkeopsis*, possibly *P. levifuscina*, from Hadley Harbor, Woods Hole, Massachusetts. Day (1973) recorded *G. vittata* from off Beaufort, and stated that the specimens were deposited at USNM and the Duke University Marine Laboratory. Since these specimens are absent, however, the record could not be verified and is considered uncertain.

Gyptis crypta, new species

Fig. 2

Gyptis vittata.—Gardiner, 1975:119, fig. 81–p.—Uebelacker, 1984:28–29 to 28–31, fig. 28–28a–g [not Webster & Benedict, 1887].
Gyptis sp.—Taylor, 1971:167–171, fig. 4a–f.

Material examined.—North Carolina: 1 paratype (USNM 52892) Wrightsville Beach, Banks Channel, intertidal in burrow

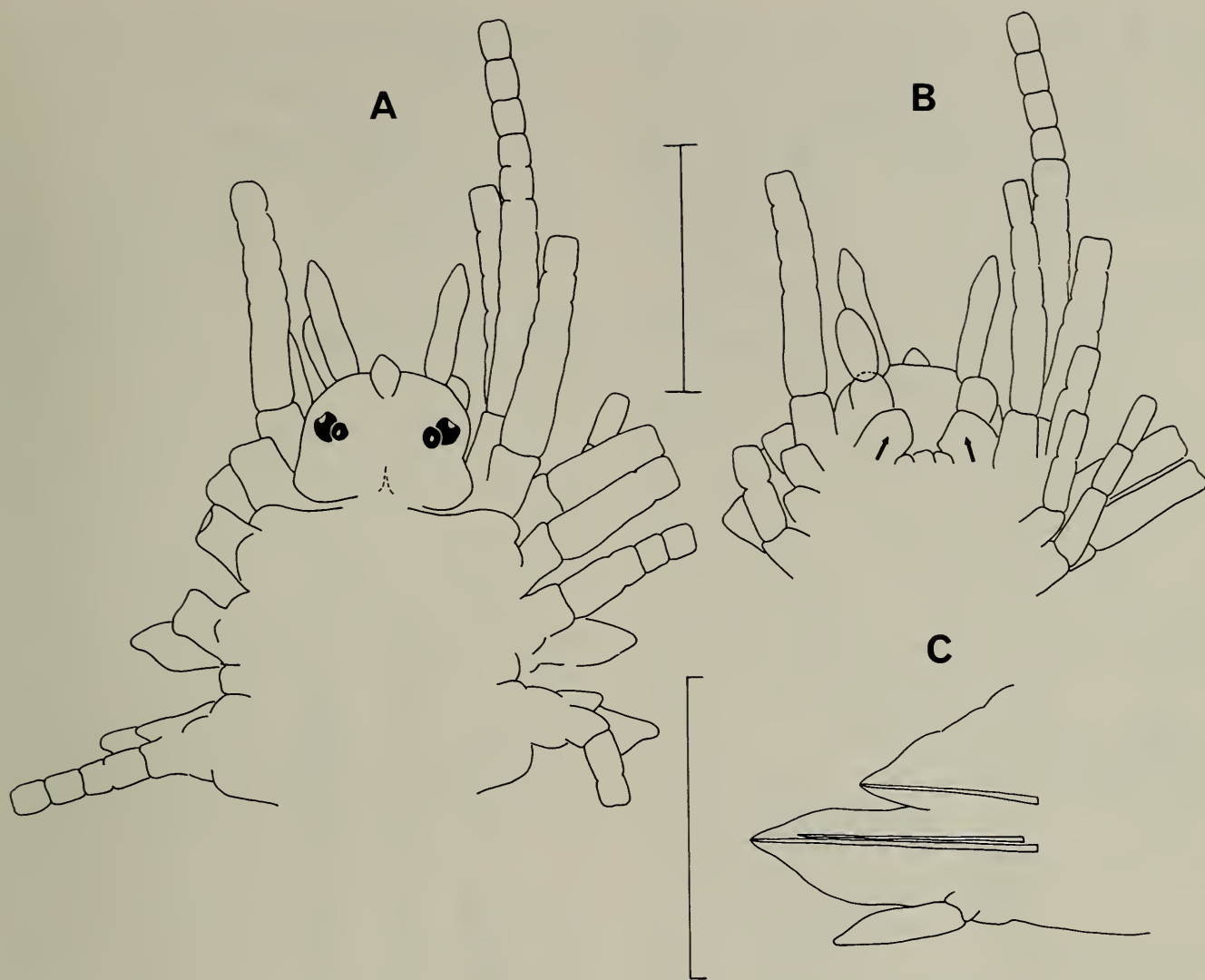


Fig. 1. *Gyptis vittata*, syntypes. Setae omitted. A. Anterior end, dorsal view. B. Same as A but drawn with focus moved to ventral side of specimen; arrows indicate lip glands. C. Parapodium. A & B slide 505, C slide 503. Scale lines 0.25 mm.

of *Notomastus lobatus*, 20 Jul 1974; holotype (USNM 52893) and 5 paratypes (USNM 157615), Wrightsville Beach, Banks Channel, intertidal in burrow of *Notomastus lobatus*, 18 Aug 1974; 5 paratypes (USNM 52894), Wrightsville Beach, Banks Channel, intertidal in burrow of *Notomastus lobatus*, 27 Feb 1975. Gulf of Mexico: 18 paratypes (USNM 45534), Florida, Tampa Bay, 1963; 1 paratype (USNM 75478), off Mississippi, 30°16.27'N, 88°36.42'W, 3.4 m, 24 Oct 1980; 1 paratype (USNM 75319), off Florida, 24°47.5'N, 82°13.16'W, 24 m, Jul 1981.

Description. — Body, excluding parapodia, cylindrical, tapered posteriorly. Venter

slightly flattened, without distinct median longitudinal furrow.

Prostomium rectangular to trapezoidal with rounded corners (Fig. 2A), with small posterior incision (often difficult to discern). Palpophores cylindrical, palpostyles thinner, narrowing to rounded ends. Palpophores as long as or slightly longer than palpostyles. Paired antennae probably situated on small ceratophores, slightly longer than or as long as palps, with fine tips. Median antenna inserted on or just in front of line between anterior pair of eyes, cylindrical or evenly tapering to a point, without extended tip. Anterior pair eyes rounded, larger than posterior pair and situated further apart,

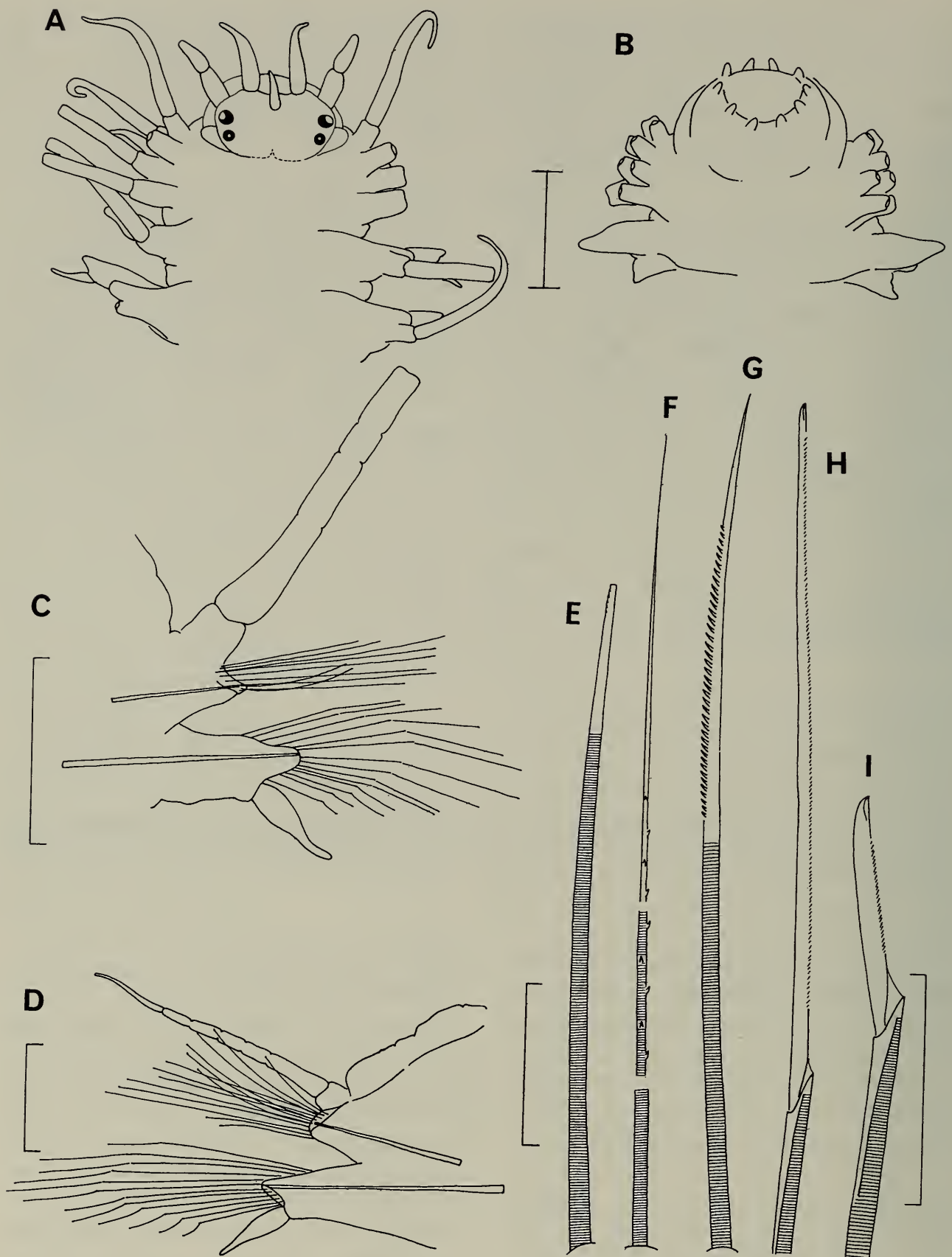


Fig. 2. *Gyptis crypta*. A. Anterior end, dorsal view. Setae omitted. B. Anterior end, ventral view. Setae omitted. C. Left parapodium, segment 5, anterior view. D. Right parapodium, median segment, anterior view. About half of full number of setae shown. E. Acicular notoseta. F. Spinose capillary notoseta. G. Serrated capillary notoseta. H. Median neuroseta. I. Ventral neuroseta. A & C-I paratypes USNM 157615, B paratype USNM 45534. Scale lines A-B 0.25 mm, C 0.2 mm, D 0.2 mm, E-G 50 μ m, H-I 50 μ m.

posterior pair rounded, both pairs with lenses. Nuchal organs lateral to prostomium, not coalescing dorsally.

Lip glands absent (Fig. 2B). Proboscis short, divided in proximal and distal parts, without discernible papillae. Distal part narrow and smooth. Ten short, conical terminal papillae in single ring.

Tentacular cirri thin and smooth, indistinctly annulated distally, tips distinctly pointed. Dorsal tentacular cirri of segments 3 and 4 reaching to about segment 10 or 11, ventral tentacular cirri of segment 3 shortest, reaching to about segment 5. Aciculae in cirrophores of tentacular cirri not discernible. Segment 1 dorsally reduced, segments 2 and 3 probably fused dorsally.

Notopodia of segment 5 (setiger 1) similar to following notopodia but slightly smaller and with fewer setae (Fig. 2C). Dorsal cirri similar to and as long as those of segment 4. Neuropodia similar to following ones but slightly smaller and with fewer setae. Ventral cirri similar to following ones.

Elevated dorsal ridges present across posterior side of each segment (Fig. 2D), most distinct on median and posterior segments.

Notopodia of median segments with more or less distinctly annulated dorsal cirri (smooth proximally). Dorsal cirri about as long as setae, slightly shorter on anterior segments, with about five or six rings, each about three times as long as wide (Fig. 2D). All dorsal cirri slender, possible alternation of length and orientation not discernible. Notopodial lobes conical, usually with one, occasionally two, internal aciculae and three kinds of notosetae: 5–10 anteriorly situated, slightly curved acicular setae (Fig. 2E), tapering, distally with fine spines; slender capillary setae smooth proximally with two alternating rows of spines medially and subdistally (Fig. 2F); and few, rather stout, ventrally situated, serrated capillary notosetae (Fig. 2G).

Neuropodia of median segments conical, with one internal acicula, and about 20–40 compound setae. Distal part of setal shafts

with transverse striation internally. Blades thin, dorsal serrated, median and dorsal ones long (Fig. 2H), ventral ones short (Fig. 2I). Dorsally situated serrated capillary setae absent. Ventral cirri smooth with fine tapering tips (Fig. 2D), without cirrophores, situated distally on neuropodium.

Pygidium rounded, pygidial cirri long and thin with pointed tips, longer than dorsal cirri, median papilla not observed.

Color: Live specimens not observed. Preserved specimens yellow with fine brown pigment spots, usually denser distally on noto- and neuropodia and on all cirri. Eyes reddish brown. Small dark spots may be present ventrally at parapodial bases.

Measurements.—Only two complete specimens observed; length 7 mm, width 1.4 mm for 39 segments; length 7.5 mm, width 1.2 mm for 39 segments.

Habitat.—Currently known intertidally from burrows of *Notomastus lobatus* and down to 24 m depth.

Distribution.—North Carolina, west coast of Florida and off Mississippi.

Etymology.—The name *crypta* is transliterated from the Greek noun “κρυπτη,” meaning haunt and hiding-place and refers to the habit of living in burrows of *Notomastus lobatus*.

Remarks.—The holotype is a mature male, and the paratypes include several mature females with eggs (50–60 μm in diameter). Gametes were observed in specimens collected from August to February in North Carolina, although those collected in February did not appear fully mature.

Gyptis crypta differs from all other known members of the genus in having a small and fixed number of terminal papillae on the proboscis, and in being provided with both noto- and neurosetae on segment 5 (rather than only neurosetae). Together with *G. rosea* Malm, 1874 and *G. mediterranea* Pleijel, 1993 *G. crypta* shares the two putative derived characters distally inserted ventral cirri that taper evenly to a point (rather than subdistally inserted ventral cirri with short

tips as in other *Gyptis*). Apart from the smaller number of proboscis papillae and the biramous parapodia of the fifth segment, *G. crypta* is separated from these two species in having lighter colored eyes (probably red on live specimens) and a more elongated body.

Although Gardiner (1975) examined the syntypes of *G. vittata*, his description of *G. vittata* and that of Uebelacker (1984) clearly characterize the new species, and specimens from both authors now constitute part of the type material of *G. crypta*.

Acknowledgments

I wish to thank H. G. Hansson and Oorania Papakosta for nomenclatural advice, K. Fauchald and L. Ward for loan of specimens as well as working facilities, B. Hilbig and T. Perkins for comments on the manuscript, and the Swedish Natural Science Research Council (contracts 9555-306 and -307) for financial support.

Literature Cited

- Day, J. H. 1973. New Polychaeta from Beaufort, with a key to all species recorded from North Carolina.—NOAA Technical Report NMFS 375: 1–140.
- Gardiner, S. L. 1975. Errant polychaete annelids from North Carolina.—*Journal of the Elisha Mitchell Scientific Society* 91:77–220.
- Malm, A. W. 1874. *Annulater i hafvet utmed Sveriges vestkust och omkring Göteborg*.—*Göteborgs K. vetenskaps- och vitterhetssamhälles handlingar* 14:67–105.
- Marion, A. F., & N. Bobretzky. 1975. Étude des Annelides du Golfe de Marseille.—*Annales des sciences naturelles* 2:1–106.
- Perkins, T. H. 1984. New species of Phyllodocidae and Hesionidae (Polychaeta), principally from Florida.—*Proceedings of the Biological Society of Washington* 97:555–582.
- Pettibone, M. H. 1963. Marine polychaete worms of the New England region.—*Bulletin of the United States National Museum* 227:1–356.
- Pleijel, F. 1993. Taxonomy of European species of *Amphiduros* and *Gyptis* (Polychaeta: Hesionidae).—*Proceedings of the Biological Society of Washington* 106:158–181.
- Taylor, J. L. 1971. Polychaetous annelids and benthic environments in Tampa Bay, Florida. Unpublished, Ph.D. Dissertation, University of Florida, Gainesville, 1332 pp.
- Uebelacker, J. M. 1984. Chapter 28. Family Hesionidae Sars, 1862. Pp. 28:1–28:39 in J. M. Uebelacker and P. G. Johnson, eds., *Taxonomic guide to the polychaetes of the northern Gulf of Mexico*. Final report to the Minerals Management Service, contract 14-12-001-29091. Barry A. Vittor & Associates, Inc., Mobile, Alabama. 7 vols.
- Webster, H. E., & J. E. Benedict. 1887. The Annelida Chaetopoda from Eastport, Maine.—*Report of the United States Commissioner of Fisheries* 1885:707–755.

Swedish Museum of Natural History, Stockholm, and (postal address): Tjärnö Marine Biological Laboratory, Pl. 2781, S-452 96 Strömstad, Sweden.